

In the Claims:

Claims 1-21 (Canceled).

22. (Currently amended) An optical imaging device, ~~in particular an objective for semiconductor lithography, having~~ comprising:

at least one system diaphragm, the system diaphragm comprising a multiplicity of mobile plates, each mobile plate is ~~which are~~ rotatably mounted on a pivot axis, ~~wherein the plates have a spherical curvature wherein each pivot axis extends through a center of curvature (C) of a sphere, and wherein the sphere is defined as a single spherical surface in which the mobile plates move relative to one another.~~

Claim 23 (Canceled).

24. (Currently amended) The optical imaging device as claimed in claim 22, ~~wherein the plates are~~ further comprising an additional plate arranged mobile in an overlapping fashion with the multiplicity of mobile plates, ~~on the additional plate and the multiplicity of mobile plates comprising two different~~ spherical surfaces, whose centers of curvature (C) are identical.

25. (Currently amended) The optical imaging device as claimed in claim 24, wherein the two different spherical surfaces have a mutual separation A of a few millimeters, preferably $A < 1 \text{ mm}$.

26. (Previously presented) The optical imaging device as claimed in claim 22, wherein the plates have a high stiffness.

27. (Currently amended) The optical imaging device as claimed in claim 23 ~~22~~, wherein the plates are each rotationally mounted on the ~~rotational-bearing~~ pivot axis by means of solid state articulations in order to rotate the plates.

28. (Previously presented) The optical imaging device as claimed in claim 22, wherein the plates are movable by means of a drive ring, the drive ring being mounted rotatably about an optical axis via solid state articulations.

29. (Previously presented) The optical imaging device as claimed in claim 28, wherein the solid state articulations are designed as solid state articulations which are radially stiff and soft in the rotation direction.

30. (Previously presented) The optical imaging device as claimed in claim 28, wherein the drive ring is respectively connected to a plate via a drive element.

31. (Previously presented) The optical imaging device as claimed in claim 30, wherein the drive element is connected to the drive ring via a solid state articulation.

32. (Previously presented) The optical imaging device as claimed in claim 28, wherein the drive ring is monolithic with the drive element.

33. (Previously presented) The optical imaging device as claimed in claim 28, wherein the drive ring is formed by a material which has a high stability under alternating load.

34. (Previously presented) The optical imaging device as claimed in claim 22, wherein a drive unit for moving the plates is arranged outside a gas space (G).

35. (Currently amended) The optical imaging device as claimed in claim 23 ~~22~~, wherein rotational bearings ~~with the rotational bearing~~ are aligned with the pivot axes of the plates and are respectively suspended in a diaphragm, the ~~rotational bearing~~ pivot axes of the plates being alignable with the center of curvature (C).

36. (Currently amended) The optical imaging device as claimed in claim 35, wherein control members are provided for aligning the ~~rotational bearing~~ pivot axes.

37. (Currently amended) The optical imaging device as claimed in claim 23 ~~35~~, wherein the rotational bearings ~~with the rotational bearing axes of the plates~~ are respectively suspended on a solid state articulation, ~~the rotational bearing axes of the plates being alignable with the center of curvature (C).~~

38. (Previously presented) The optical imaging device as claimed in claim 37, wherein the solid state articulation is designed as a quadruple articulation.

39. (Currently amended) The optical imaging device as claimed in claim 35, wherein tactile or optical measuring methods are provided for measurement when aligning ~~rotational bearing~~ pivot axes of the plates.

40. (Currently amended) A variable system diaphragm for a microlithographic projection exposure apparatus having a multiplicity of plates held in a mobile fashion by means of solid state articulations; and wherein each mobile plate is rotatably mounted on a pivot axis defined by the solid state articulations, wherein each pivot axis extends through a center of curvature (C) of a sphere, and wherein the sphere is defined as a single spherical surface in which the mobile plates move relative to one another.

41. (Previously presented) The variable system diaphragm as claimed in claim 40, wherein the plates are mounted rotationally by the solid state articulations.

42. (Currently amended) A variable system diaphragm having a multiplicity of mobile plates, the plates having a spherical curvature and being rotationally mounted, rotational bearing axes of the plates being aligned with a center of curvature (C) of a sphere, and the sphere determining a single surface on which the plates are mobile relative to one another.

43. (Currently amended) The variable system diaphragm as claimed in claim 42, ~~wherein the plates are~~ further comprising an additional plate arranged mobile in an overlapping fashion with the multiplicity of mobile plates, on the additional plate and the multiplicity of mobile plates comprising two different spherical surfaces, whose centers of curvature (C) are identical.

44. (Currently amended) The diaphragm as claimed in claim 43, wherein the two different spherical surfaces have a mutual separation A of a few millimeters, preferably $A < 1 \text{ mm}$.

45. (Currently amended) A projection objective in semiconductor lithography having optical elements, at least one variable system diaphragm for a microlithographic projection exposure apparatus being provided for introduction into a concave surface of an optical element, the diaphragm following a curved surface; and

wherein the diaphragm comprises a plurality of mobile plates, each mobile plate is rotatably mounted on a pivot axis, wherein each pivot axis extends through a center of curvature (C) of a sphere, and wherein the sphere is defined as a single spherical surface in which the mobile plates move relative to one another.

46. (Previously presented) The projection objective as claimed in claim 45, wherein the diaphragm follows a spherically curved surface.

Claims 47-48 (Canceled).

49. (Currently amended) The projection objective as claimed in claim 48 45, wherein ~~the plates are~~ further comprising an additional plate arranged mobile in an overlapping fashion with the plurality of mobile plates, ~~on the additional plate and the plurality of mobile plates comprising two~~ different spherical surfaces, whose centers of curvature (C) are identical.

50. (Previously presented) The projection objective as claimed in claim 46 45, wherein the plates are mounted rotationally by solid state articulations.

51. (New) The optical imaging device as claimed in claim 22, wherein the pivot axis for each mobile plate extends through the mobile plate.

52. (New) The optical imaging device as claimed in claim 22, wherein the mobile plates are configured to move between a closed position and an opened position, and wherein the configuration provides each mobile plate to be spaced from each other mobile plate during the movement between the closed and opened positions.

53. (New) The optical imaging device as claimed in claim 22, wherein the mobile plates are configured to move between a closed position and an opened position, and wherein the configuration provides each mobile plate to move between the closed and opened positions without one mobile plate contacting any other mobile plate.

54. (New) The optical imaging device as claimed in claim 22, wherein the optical imaging device comprises an objective for semiconductor lithography.

55. (New) An optical imaging device comprising:
at least one system diaphragm, the system diaphragm comprising a multiplicity of mobile plates, each mobile plate is rotatably mounted on a pivot axis, wherein the pivot axis extends through a center of curvature (C) of a sphere, and wherein the sphere is defined as a surface in which the mobile plates move relative to one another; and

wherein at least two of the mobile plates are arranged to rotate on respective pivot axes in an overlapping configuration on two different spherical surfaces, the two different spherical surfaces having an identical center of curvature (C).

56. (New) The optical imaging device as claimed in claim 55, wherein the two different spherical surfaces are separated by a spatial distance ranging from less than 1 mm to a few millimeters.

57. (New) An optical imaging device, in particular an objective for semiconductor lithography, having at least one system diaphragm, the system diaphragm comprising a multiplicity of mobile plates which are rotatably mounted, wherein the plates have a spherical curvature; and

wherein the mobile plates are movable by means of a drive ring, the drive ring being mounted rotatably about an optical axis via solid state articulations.

58. (New) An optical imaging device, in particular an objective for semiconductor lithography, having at least one system diaphragm, the system diaphragm comprising a multiplicity of mobile plates which are rotatably mounted, wherein the plates have a spherical curvature; and

wherein a drive unit for moving the plates is arranged outside a gas space (G).